

The public mental health significance of research on socio-economic factors in schizophrenia and major depression

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This paper reviews the epidemiological research evidence on the role of socio-economic factors in the origins and disease experience of schizophrenia and major depression. The studies were conducted in different countries over many years. Although their findings are divided in their support of either the social causation or the drift hypothesis, all of them agree that persons with these disorders are at high disadvantage in society. Several factors for this have been identified. These studies provide the rationale for community-based interventions that have to be guided by principles of equity in the distribution of resources and grounded in biopsychosocial models of care that comprehensively answer the needs of the affected populations.

Key words: Schizophrenia, major depression, socio-economic factors, community-based interventions

Schizophrenia and major depression are two of the ten leading mental disorders that generate disability and shorten life (1). Their joint contribution to the global burden of disease in the year 2000 was estimated to reach 11.2% among the population aged 15-44.

Schizophrenia captures most of the resources available to psychiatric services in both developed and developing countries. As for major depression, it is the fourth leading cause of disease burden and accounted for 4.4% of total disability adjusted life years (DALYs) lost in the year 2000 (2); it is estimated that by 2020 it will become the second leading cause of DALYs lost (3). It is thus not surprising that for decades the World Health Organization (WHO) has collaborated with countries to better understand these disorders in terms of their origin and course (4), to organize their classification (5), to screen and diagnose them (6), to organize proper services and care (7), and to promote the safeguard of the rights of the persons affected by these disorders and their families (8).

An important concern of the work of WHO is to highlight how socio-economic factors impinge upon the disease origin and experience of both disorders. WHO's purpose is to promote ways to reduce the adverse effects of low socio-economic status (SES) in persons with psychiatric disorders, calling on both governments and society to make means and resources available (9) and on mental health professionals to implement comprehensive rather than discrete interventions (3).

The objective of this paper is to briefly review findings on the role of socio-economic factors in the origins of schizophrenia and depression, and in the disease experience of people suffering from these conditions. As stated above, the aim is to highlight the "case for action" based on available epidemiologic research with regard to intervention strategies.

SCHIZOPHRENIA

Community-based epidemiological studies across countries and over time have consistently identified an inverse relationship between SES and prevalence rates of schizophrenia (for reviews, see 10-12). The ratio between the current prevalence (defined as period prevalence up to one-year prevalence) of the disorder among low-SES and high-SES people was 3.4, whereas the ratio for lifetime prevalence was 2.4 (11). This inverse relationship is found among both men and women and regardless of the treatment status of the person. Furthermore, the association is found in studies using different methods of case ascertainment and diagnosis.

Why are there more persons with schizophrenia in the lower SES groups, defined by occupation, education, place of residence, income, or by a combination of these variables? The social causation and the social selection (drift) hypotheses have been raised to explain the differential rates.

In line with the social causation hypothesis, Kohn (13) argued years ago that social class is related to schizophrenia since the conditions of life built into the lower social class are conducive to this disorder. Several conditions prevailing in the low SES group were imputed, e.g., environmental adversity, such as discrimination (14); disadvantage, including unemployment (15); and stress (16). These factors may account for the contrasting rates between SES groups in a single population (17) or in different ethnic groups of different social position (18). In contrast, the social selection hypothesis argues that, on account of the disorder, a person drifts down the social ladder or fails to rise out of low SES, in societies where upward social mobility is possible (12,19).

This long-standing research issue has been explored by many authors in many countries over many years. Gold-

berg and Morrison (20) showed that parents of persons of low SES admitted with schizophrenia to hospitals in England and Wales were not found in the lowest class with greater relative frequency than is the case in the total population. In addition, they explored the occupations of grandfathers, uncles and brothers and of the patients. There was a similar class distribution among these relatives compared to the patients' fathers but not to the patients themselves. These findings pointed to a clear drift phenomenon. Prior to Goldberg and Morrison, others (21-23) in the United States had argued for the drift hypothesis. An adoption study of children with schizophrenia, in Scandinavia, was also partially consistent with downward mobility (24). Findings supporting the drift hypothesis were confirmed in a two-year follow-up study conducted in the Netherlands. In this study, both educational and occupational downward mobility were greater than expected among those with a diagnosis of schizophrenia compared to their fathers (25). These authors also found that some individuals improved in their social class compared to their fathers. These investigators and several others in various countries (26-29) found that the SES at birth among those with schizophrenia was actually higher than expected.

A study conducted in Sweden showed a similar result for a cohort born in 1953 that had inpatient hospitalizations up to 1983 (30). In comparing the parental SES in 1963 and the patient's own SES in 1980, no evidence of an association between low status origin and heightened risk for schizophrenia was found. In this cohort of 71 subjects, the majority (n=43) was no longer in the work force by age 27, and most others were concentrated in low status occupations. These findings were consistent with social selection (drift) having greater weight than social causation. Jones et al (31) also found social selection to be the more likely explanation when their cohort of individuals with schizophrenia and affective psychosis were noted to have lower social class than their fathers. Among those with schizophrenia, this downward decline began prior to the onset of the disorder and continued following diagnosis. Prior to diagnosis, investigators (32,33) have found that persons with schizophrenia reside in areas characterized by higher social deprivation, suggesting that social decline began with the prodromal symptoms.

The educational attainment of a hospitalized patient with schizophrenia becomes truncated as a result of the disorder. A study in Finland explored the educational attainment of 80 patients who belonged to a 1966 cohort (34). Patients admitted to the hospital at age 22 or younger achieved only basic education with a higher frequency than both those whose age of onset was 23 or older and those without a psychiatric admission.

In Israel, investigators contrasted true prevalence rates of schizophrenia among ethnically advantaged and ethnically disadvantaged Israel-born Jews, controlling for SES. They showed that social selection was more important than social causation to explain the inverse relationship between

SES and schizophrenia. Indeed, the rates were higher among the ethnically advantaged in each SES group (17).

In Finland, a retrospective cohort study was carried out in patients discharged with the diagnosis of schizophrenia in 1987-1988. Using five census periods – 1970, 1975, 1980, 1985 and 1987 – the authors were able to demonstrate a progressive decline in social class, with most becoming unemployed after initially having an appropriate SES primarily based on their parent's status (35). The investigators found a more pronounced decline in SES for men compared to women, possibly due to the earlier age of onset. Similar findings were obtained by a study examining parental social class upon birth of individuals that eventually developed schizophrenia (36).

In contrast, a number of studies concluded that indicators of social inequality at birth are associated with increased risk of adult onset schizophrenia (37). This conclusion is supported by studies investigating rates in immigrant populations to the United Kingdom, such as the African-Caribbeans (see 14 for a review); in first and second-generation Moroccan immigrants to the Netherlands (38); and in different groups of immigrants to Sweden (18). In the United Kingdom, the second-generation African-Caribbeans have significantly higher admission rates for schizophrenia than their parents or their White counterparts. Importantly, rates of schizophrenia in the countries from which the immigrants arrived – Jamaica (39), Trinidad and Tobago (40) and Barbados (41) – are not unduly high, thus arguing in support of the social causation hypothesis.

SES, as a result of its associated factors, such as deprivation and adversity, may affect the incidence and, ultimately, the lifetime and period prevalence rates of schizophrenia. In addition, low SES may increase current prevalence rates by widening the treatment gap between the treated and the untreated disorder, resulting in individuals remaining symptomatic and thereby meeting diagnostic criteria in community studies. A recent estimation of the treatment gap for schizophrenia based on lifetime health service utilization for mental health found that at least 32% of those individuals diagnosed with non-affective psychoses did not receive mental health care (42). The poorer classes may have less access to treatment settings and to more expensive curative and rehabilitative interventions, such as the new generation antipsychotics or vocational training.

MAJOR DEPRESSION

A summary of findings of several epidemiologic community studies of major depression noted that the median low-SES compared with the high-SES prevalence rates yield a ratio of 2.4 for the prevalence period of up to 1 year, and 1.1 for lifetime prevalence (11). The social causation hypothesis is supported by most but not all surveys. A recent meta-analysis showed that persons with lower SES had an odds of reporting depression 1.8 times higher than advantaged SES groups (43). These findings are not con-

financed to industrialized countries. Indeed, a recent review of studies conducted in several locations within African and Asian countries identified low SES-related variables as a risk factor (44).

Incidence studies constitute a complementary source of information. In the USA, Bruce et al (45) examined the role of poverty in the incidence of major depressive disorder using a standardized diagnostic instrument in a large size population at two points in time. The adjusted odd ratios were in the order of 2.5 (95% CI 1.3, 4.8). From the follow-up of the Stirling County study in Canada, Murphy et al (46) concluded that poverty, depression, and the relationship between them remained stable over time. While chronicity and recurrence were not limited to those in the low SES, the persistence of illness played a role in maintaining the relationship between poverty and depression. Lorant et al (43) found that the odds of persisting depression was 2.1 higher among the low SES groups. One of the reasons was that the latter use less services for depression (47).

For implementation of timely intervention it is also of interest to establish whether early or current adversity is causative of depression. In the USA, Ritsher et al (48) relied on cohorts defined by the offspring's exposure to parental depression. Probands with major depression, recruited from treatment settings, and controls without major depressive disorder were assessed up to 4 times over 17 years. Their respective children and spouses were assessed as well. SES was measured by education and occupation. There was a strong and consistent effect of low parental education on the onset of major depressive disorder in their offspring, also after adjustment for parental major depression and offspring's gender and age. The authors concluded that higher parental education might protect the offspring against the development of depression.

A British study confirmed the effect of early adversity but, most importantly, it also identified the role of current social stresses such as financial hardships and employment insecurity (48). In India, Patel et al (49), in a primary health care population, found that inability to buy food due to lack of money and being in debt were associated to a higher percentage of common mental disorders (anxiety and depression).

DISCUSSION

What is the significance of these findings from a public mental health perspective? Assuming that the social selection hypothesis with regard to schizophrenia turns out to be firmly proven, we are still facing a disorder that takes the person into a downward path leading to poverty, or is responsible for perpetuating poverty for those born into it. Once poor, the person partakes of two sets of disadvantages: the social effects of the illness, including stigma, which is higher in lower education groups, and the harsh environmental conditions related to his/her class affilia-

tion. To be effective, services must protect this person from sliding down further and further.

SES may contribute to the period prevalence rate and ensuing disability by acting on the recovery rate from the psychosis. The disease experience of the person with schizophrenia has a role in the ensuing disability. As early as in the 1960s, Cooper (50,51), in the United Kingdom, found that patients from the lower classes had longer hospital stays, were much less likely to be improved or recovered upon discharge, were liable to be readmitted earlier and were more likely to become chronically institutionalized than their upper class counterparts. In the community they were less likely to be employed and showed worse social adjustment. Recently, Mallet et al (15), also in the United Kingdom, found that the most vulnerable group in their study on the role of ethnicity in the origin of schizophrenia, the African-Caribbeans, exhibited two current risk factors more often than other groups: to be unemployed and to live alone.

Saraceno and Barbui (52) have argued that an association between SES and outcome would imply that mental disorders such as depression and schizophrenia could not be managed without taking into account the environment of poverty and discrimination. Importantly, Ciompi (53) noted that the relatively benign course of schizophrenia in Switzerland might have resulted from the full employment opportunities available in this country. Due to the ongoing process of globalization, an increasing number of salaried persons free of major psychiatric disorders may become redundant, following plant reductions or closures, and displace from work persons with major disorders holding low skills jobs (54).

Saraceno (55) argued that, in parallel to the classical biopsychosocial etiological hypothesis, an identical paradigm for mental health intervention is needed. He wrote: "The social dimension of mental illness should be an intrinsic component of intervention and not just a concession in etiological modeling". Even if the social selection hypothesis is found to have dominant weight in the origin of schizophrenia, social factors such as those that have been implicated by supporters of the social causation hypothesis need to be addressed, if the downward path is to be blocked or even reversed, e.g., by guided education or retraining (56) and by the establishment of suitable work environments, such as the cooperatives implemented in Argentina, Brazil or Italy (e.g., 57).

Indeed, the WHO would like to see more interventions addressing putative environmental factors already identified by research. For example, among immigrant groups (58), mental health risks may be buffered by adequate social policies. Thornicroft and Tansella (59) have incorporated epidemiological research findings in a modified matrix of community services to address the needs of the persons with schizophrenia. In addition, with regard to depression, a full community psychiatry-based model may include into the repertoire of interventions also evidence-

based primary prevention actions that address those in low SES positions (60-62).

The judicious combination of social policies purported to protect the poor and of mental health programs and services based on equity could put the research findings we now possess into motion for the benefit of our most vulnerable populations. This conclusion is not novel, but such a combined approach of policies, programs and services is yet to be adopted worldwide.

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